parallel (x, y) and perpendicular (z) positions, velocities, and motion relative to the panel. These will be discussed below in more detail with regard to FIGS. **9-12**.

[0042] FIG. **3***a* illustrates an exemplary mutual capacitance scheme for dynamically reconfiguring sensor size and shape using intersecting composite drive lines and composite sense lines to form a composite electrode according to embodiments of the invention. In the example of FIG. **3***a*, sensor panel **200** may include drive lines **201** and sense lines **202**. Drive lines **201** may intersect sense lines **202**. Drive lines **201***a-e* can be connected to each other through switches **215**, illustrated symbolically in FIG. **3***a*. Note that switches **215**, although drawn adjacent to sensor panel **200** in FIG. **3***a*, can be located on a separate panel subsystem as shown in FIG. **1**. Thus, drive lines **201***a-e* can form a composite drive line **211** that can simultaneously or nearly simultaneously send a drive signal to all the pixels defined by lines **201***a-e*. Similarly, sense lines **202***a-e* can be connected to each other through switches **213**, illustrated symbolically in FIG. **3***a*. Thus, sense lines **202***a-e* can form a composite sense line **212** that can send a combined sense signal from all the pixels defined by lines **202***a-e*. The intersecting pixels of composite drive line **211** and composite sense line **212** can form composite electrode **214** as a single pixel, illustrated by the shaded region in FIG. **3***a*. The sensing circuitry can only sense the total capacitance of these pixels in composite electrode **214** and not their individual capacitances. In essence, what were individual pixels are now connected to form a single pixel. As a result, the pixel size and shape of sensor panel **200** may be reconfigured in this portion of the panel. If the pixel size and shape are to be reconfigured back, one or both of switches **213** and **215** may be disabled.

[0043] FIG. **3***b* illustrates an exemplary mutual capacitance scheme for dynamically reconfiguring sensor size and shape using a composite drive electrode formed from one group of parallel sense lines and a composite sense electrode formed from another group of parallel sense lines according to embodiments of the invention. In the example of FIG. **3***b*, all of sense lines **202***a-d* can be connected to each other through switches **225** (illustrated symbolically in FIG. **3***b*) to form composite drive electrode **224**, illustrated by the left shaded region in FIG. **3***b*. Note that switches **225**, although drawn adjacent to sensor panel **200** in FIG. **3***b*, can be located on a separate panel subsystem as shown in FIG. **1**. In this embodiment, composite drive electrode **224** can be created by simultaneously or nearly simultaneously sending a drive signal via composite drive line **221** through sense lines **202***a-d*. Similarly, sense lines **202***e-i* can be connected to each other through switches **223** (illustrated symbolically in FIG. **3***b*) for the pixels defined by the intersections of each of drive lines **201** with sense lines **202***e-i* to form composite sense electrode **225**, illustrated by the right shaded region in FIG. **3***b*. Thus, sense lines **202***e-i* can form a composite sense line **222** that can send a combined sense signal from all the pixels defined by lines **202***e-i*.

[0044] In summary, in the embodiment of FIG. **3***b*, the drive lines **201** may not be used, and sense lines **202** may be grouped into composite drive electrode **224** and composite sense electrode **225** located adjacent to each other. The composite drive electrode **224** and sense electrode **225** can form a single mutual capacitance sensor across which fringing electric field lines may be formed when the composite drive electrode **224** is stimulated with a stimulation signal. A finger or other object touching down or hovering over the sensor panel may block some of the electric field lines, resulting in a reduction in the amount of charge coupled across the sensor. This change in coupled charge can then be detected by the sensing circuitry.

[0045] As a result, the pixel size and shape of sensor panel **200** may be reconfigured in these portions of the panel. If the pixel size and shape are to be reconfigured back, one or both of switches **223** and **225** may be disabled.

[0046] FIG. **4***a* illustrates an exemplary self capacitance scheme for dynamically reconfiguring sensor size and shape using composite columns of electrodes according to embodiments of the invention. In the example of FIG. **4***a*, sensor panel **200** may include an array of electrodes, where each electrode may be formed at the intersection of a drive and sense line. Columns of electrodes can be connected to each other by configurable switches represented symbolically by conductive lines **238***a-e* and conductive lines **233** to form composite electrode **234** as a single pixel, illustrated by the shaded region in FIG. **4***a*. Thus, the electrodes can send a combined sense signal **232** from all the pixels defined by these electrodes. The sensing circuitry can only sense the total capacitance of these pixels in composite electrode **234** and not their individual capacitances. As a result, the pixel size and shape of sensor panel **200** may be reconfigured in this portion of the panel. If the pixel size and shape are to be reconfigured back, one or both of lines **233** and **238** may be disabled.

[0047] FIG. **4***b* illustrates an exemplary self capacitance scheme for dynamically reconfiguring sensor size and shape using composite rows of electrodes according to embodiments of the invention. In the example of FIG. **4***b*, rows of electrodes can be connected to each other by configurable switches represented symbolically by conductive lines **248***a-e* and conductive lines **243** to form composite electrode **244** as a single pixel, illustrated by the shaded region in FIG. **4***b*. Thus, the electrodes can send a combined sense signal **242** from all the pixels defined by these electrodes. The sensing circuitry can only sense the total capacitance of these pixels in composite electrode **244** and not their individual capacitances. As a result, the pixel size and shape of sensor panel **200** may be reconfigured in this portion of the panel. If the pixel size and shape are to be reconfigured back, one or both of lines **243** and **248** may be disabled.

[0048] FIG. **4***c* illustrates an exemplary self capacitance scheme for dynamically reconfiguring sensor size and shape using composite loop electrodes according to embodiments of the invention. In the example of FIG. **4***c*, all of the electrodes in a loop can be connected to each other by configurable switches represented symbolically by conductive lines **253** and **255** that connect their drive and sense lines to form composite loop electrode **254** as a single pixel, illustrated by the heavy line in FIG. **4***c*. Thus, the electrodes can send a combined sense signal **252** from all the pixels defined by these electrodes. The sensing circuitry can only sense the total capacitance of these pixels in composite electrode **254** and not their individual capacitances. As a result, the pixel size and shape of sensor panel **200** may be increased in this portion of the panel. If the pixel size and shape are to be increased again, one or both of lines **253** and **255** may be disabled.

[0049] In some embodiments, the sensor panel may dynamically switch between different mutual capacitance schemes, such as in FIGS. **3***a* and **3***b*. This may be accomplished by enabling and disabling the appropriate switches that connect the drive and sense lines involved in forming a